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=> S Hydrolase (4A) activity
L2        18826 HYDROLASE (4A) ACTIVITY

=> S L1 (P) humidity
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FIELD CODE - 'AND' OPERATOR ASSUMED 'L7  (P) HUMIDITY'
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FIELD CODE - 'AND' OPERATOR ASSUMED 'L9  (P) HUMIDITY'
L3          24 L1 (P) HUMIDITY

=> S (aryldialkylphosphatase or a-esterase or aryltriphosphatase or (paraoxon
hydrolase) or paraoxonase or phosphotriesterase or oph or (organophosphorus
hydrolase) or (diisopropyl-fluorophosphatase) or carboxylase or (parathion
hydrolase) or (organophasphate hydrolase)) (4A) humidity
L4            8 (ARYLDIALKYLPHOSPHATASE OR A-ESTERASE OR ARYLTRIPHOSPHATASE OR
                (PARAOXON HYDROLASE) OR PARAOXONASE OR PHOSPHOTRIESTERASE OR
                OPH OR (ORGANOPHOSPHORUS HYDROLASE) OR (DIISOPROPYL-FLUOROPHOSPH
                ATASE) OR CARBOXYLASE OR (PARATHION HYDROLASE) OR (ORGANOPHASPHA
                TE HYDROLASE)) (4A) HUMIDITY

=> S (aryldialkylphosphatase or a-esterase or aryltriphosphatase or (paraoxon
hydrolase) or paraoxonase or phosphotriesterase or oph or (organophosphorus
hydrolase) or (diisopropyl-fluorophosphatase) or carboxylase or (parathion
hydrolase) or (organophasphate hydrolase)) (P) humidity
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
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L5          163 (ARYLDIALKYLPHOSPHATASE OR A-ESTERASE OR ARYLTRIPHOSPHATASE OR
                (PARAOXON HYDROLASE) OR PARAOXONASE OR PHOSPHOTRIESTERASE OR
                OPH OR (ORGANOPHOSPHORUS HYDROLASE) OR (DIISOPROPYL-FLUOROPHOSPH
                ATASE) OR CARBOXYLASE OR (PARATHION HYDROLASE) OR (ORGANOPHASPHA
                TE HYDROLASE)) (P) HUMIDITY

=> S (aryldialkylphosphatase or a-esterase or aryltriphosphatase or (paraoxon
hydrolase) or paraoxonase or phosphotriesterase or oph or (organophosphorus
hydrolase) or (diisopropyl-fluorophosphatase) or carboxylase or (parathion
hydrolase) or (organophasphate hydrolase)) (S) humidity
L6           59 (ARYLDIALKYLPHOSPHATASE OR A-ESTERASE OR ARYLTRIPHOSPHATASE OR
                (PARAOXON HYDROLASE) OR PARAOXONASE OR PHOSPHOTRIESTERASE OR
                OPH OR (ORGANOPHOSPHORUS HYDROLASE) OR (DIISOPROPYL-FLUOROPHOSPH
                ATASE) OR CARBOXYLASE OR (PARATHION HYDROLASE) OR (ORGANOPHASPHA
                TE HYDROLASE)) (S) HUMIDITY

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L7          11 L1 AND L6

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L8   ANSWER 1 OF 9  SCISEARCH  COPYRIGHT (c) 2010 The Thomson Corporation  on
     STN                                                    DUPLICATE 1
AN   1992:136042  SCISEARCH
GA   The Genuine Article (R) Number: HE704
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TI PHYSIOLOGICAL AND ANATOMICAL FEATURES OF 2 TRITICUM-DICOCCOIDES WHEAT ACCESSIONS DIFFERING IN PHOTOSYNTHETIC RATE
AU KEBEDE H (Reprint); JOHNSON R C; CARVER B F; FERRIS D M
CS OKLAHOMA STATE UNIV, DEPT AGRON, STILLWATER, OK 74078; WASHINGTON STATE UNIV, USDA ARS, PLANT INTRODUCT STN, PULLMAN, WA 99164
CYA USA
SO CROP SCIENCE, (JAN-FEB 1992) Vol. 32, No. 1, pp. 138-143.
ISSN: 0011-183X.
PB CROP SCIENCE SOC AMER, 677 S SEGOE ROAD, MADISON, WI 53711.
DT Article; Journal
FS AGRI
LA English
REC Reference Count: 25
ED Entered STN: 1994
Last Updated on STN: 1994
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB The wild tetraploid species Triticum dicoccoides (L.) Korn has many traits that may be useful to hexaploid wheat (T. aestivum L.). Two accessions of this species (PI 428042 and PI 428109) were found to have similar-sized leaves, but they differ by almost-equal-to 30% in net CO2 assimilation per unit leaf area (A). We sought to identify physiological and anatomical factors that would explain the difference in photosynthetic rate between the two accessions, and between these accessions and the hexaploid wheat 'TAM W-101'. Photosynthetic responses to CO2 (at 20 and 210 mL O2 L-1 air), light, and humidity, and also ribulose bisphosphate carboxylase (rubisco) activity and sucrose concentration, were determined on new fully expanded leaves of each genotype. Anatomical features associated with photosynthesis were determined using light and electron microscopy. PI 428109 showed consistently higher A than PI 428042 at varying levels of CO2, light, and humidity. Higher rubisco activity was observed in leaves of PI 428109 than PI 428042, as also indicated by a greater slope of the initial linear portion of the A vs. c(i) (intercellular leaf CO2 concentration) curve. A higher sucrose concentration was observed in the leaves of PI 428042 than in PI 428109. No anatomical differences were detected beween the two T. dicoccoides accessions. Therefore, photosynthetic differences between the two T. dicoccoides accessions were biochemically, and not anatomically, driven.

L8 ANSWER 2 OF 9 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 1991:161016 HCAPLUS
DN 114:161016
OREF 114:27151a,27154a
TI Decreased ribulose-1,5-bisphosphate carboxylase-oxygenase in transgenic tobacco transformed with antisense rbcS. II. Flux-control coefficients for photosynthesis in varying light, carbon dioxide, and air humidity
AU Stitt, M.; Quick, W. P.; Schurr, U.; Schulze, E. D.; Rodermel, S. R.; Bogorad, L.
CS Univ. Bayreuth, Bayreuth, W-8580, Germany
SO Planta (1991), 183(4), 555-66
CODEN: PLANAB; ISSN: 0032-0935
DT Journal
LA English
AB Transgenic tobacco (Nicotiana ttabacum) plants transformed with antisense rbcS to produce a series of plants with a progressive decrease in the amount of ribulose-1,5-bisphosphate carboxylase/oxygenase (Rubisco) have been used to investigate the contribution of Rubsico to the control of photosynthesis at different irradiance, CO2 concns. and vapor-pressure deficits. Assimilation rates, transpiration, the internal CO2 concentration and

chlorophyll fluorescence were measured in each plant. The flux-control coefficient of Rubisco was estimated from the slope of the plot of Rubisco content vs. assimilation rate. The flux-control coefficient had a value of ≥0.8 in high irradiance, (1050 μmol m-2 s-1), low-vapor pressure deficit (4 mbar) and ambient CO2 (350 μbar). Control was marginal in enhanced CO2 (450 μbar) or low light (310 μmol m-2 s-1) and was also decreased at high vapor-pressure deficit (17 mbar). No control was exerted in 5% CO2. The flux-control coeffs. of Rubisco were compared with the fractional demand placed on the calculated available Rubisco capacity. Only a marginal control on photosynthetic flux is exerted by Rubisco until over 50% of the available capacity is being used. Control increases as utilization rises to 80%, and approaches unity (i.e. strict limitation) when more than 80% of the available capacity is being used. In low light plants with reduced Rubisco have very high energy-dependent quenching of chlorophyll fluorescence (qE) and a decreased apparent quantum yield. It is argued that Rubisco still exerts marginal control in these conditions because decreased Rubisco leads to increased thylakoid energization and high-energy dependent dissipation of light energy, and lower light-harvesting efficiency. The flux-control coefficient of stomata for photosynthesis was calculated from the flux-control coefficient of Rubisco and the internal CO2 concentration, by applying the connectivity theorem. Control by the stomata varies between zero and about 0.25. It is increased by increased irradiance, decreased CO2 or decreased vapor-pressure deficit. Photosynthetic oscillations in saturating irradiance and CO2 are suppressed in decreased-activity transformants before the steady-state rate of photosynthesis is affected. This provides of excess Rubisco. Comparison of the flux-control coeffs. of Rubisco with mechanistic models of photosynthesis provides direct support for the reliability of these models in conditions where Rubisco has a flux-control coefficient approach unity (i.e. limits photosynthesis), but also indicates that these models are less useful in conditions where control is shared between Rubisco and other components of the photosynthetic apparatus

OSC.G 62 THERE ARE 62 CAPLUS RECORDS THAT CITE THIS RECORD (62 CITINGS)

L8 ANSWER 3 OF 9 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 1991:244427 HCAPLUS
DN 114:244427
OREF 114:41185a,41188a
TI Does air relative humidity during growth condition photosynthetic characteristics of coffee leaf?
AU Nunes, Maria A.; Rijo, Paula S.
CS Cent. Estud. Prod. Tecnol. Agric., Lisbon, Port.
SO Curr. Res. Photosynth., Proc. Int. Conf. Photosynth., 8th (1990), Meeting Date 1989, Volume 4, 721-3. Editor(s): Baltscheffsky, Margareta. Publisher: Kluwer, Dordrecht, Neth.
CODEN: 57BCAN
DT Conference
LA English
AB Coffee plants (Coffea arabica cv. CATURRA) about two years old were placed in a growth room with artificial irradiance (150 μmol m-2s-1) and low (50%) relative air humidity or in a greenhouse provided with natural light of similar irradiance but high relative air humidity (80%). Leaves from the greenhouse were less sclerophyllous and exhibited a photosynthetic rate 4 times higher and also higher conductances under the same irradiance. The initial slope of the relationship between net photosynthesis and internal CO2 concentration was higher in leaves from the greenhouse, suggesting higher carboxylation efficiency. Accordingly, leaves from the greenhouse had higher contents of chlorophyll (+26% per

unit area) protein (+20% per unit area) and ribulose diphosphate carboxylase activity (3.5-fold per unit area). It is suggested that photosynthetic performance of coffee leaves is reduced by air humidity less than 50% during development.

L8 ANSWER 4 OF 9 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 1990:588324 HCAPLUS
DN 113:188324
OREF 113:31799a,31802a
TI Effect of temperature and humidity during growth on yield and photosynthetic characteristics of triticale
AU Chugunova, N. G.; Tsyuryupa, S. N.; Karpilova, I. F.; Romanova, A. K.
CS Inst. Soil Sci. Photosynth., Pushchino, USSR
SO Fiziologiya Rastenii (Moscow) (1990), 37(4), 659-67
CODEN: FZRSAV; ISSN: 0015-3303
DT Journal
LA Russian
AB Growth and production relationships to photosynthetic and respiration rates and ribulose bisphosphate carboxylase/oxygenase (RBPC/O) activity were studied in a hexaploid type of amphidiploid Triticale, cv. Nemiga-2, grown at a day/night temperature of 28°/21° and 45% humidity (warm treatment), or at 22°/17° and 75% humidity (moderate treatment). In the moderate treatment, as compared with the warm one, there were delays in the onset of successive ontogenetic phases and in growth. The root/shoot dry weight ratio was higher in the moderate treatment. Grain yields were equal in both treatments. Negligible differences between the treatments were in rates of photosynthetic CO2 exchange, in rate per unit of leaf surface, and in the carboxylase/oxygenase activity ratio of RBPC/O. However, both the activities and soluble protein (consisting mostly of RBPC/O) per unit leaf surface were higher in the moderate treatment. Appreciable differences between the treatments in total biomass accumulation were mainly due to longer life span and greater dimensions of leaves in the moderate treatment.

L8 ANSWER 5 OF 9 BIOSIS COPYRIGHT (c) 2010 The Thomson Corporation on STN
AN 1990:470926 BIOSIS
DN PREV199090110346; BA90:110346
TI STUDIES ON THE CONTROLLED ATMOSPHERE CA STORAGE OF FRUITS AND VEGETABLES X. EFFECT OF CARBON DIOXIDE IN STORAGE ATMOSPHERE ON THE METABOLISM OF ORGANIC ACIDS IN SATSUMA MANDARIN CITRUS-UNSHIU MARC FRUITS.
AU TANAKA Y [Reprint author]
CS AICHI-KEN AGRIC RES CENTER, NAGAKUTE, AICHI, JPN
SO Research Bulletin of the Aichi-ken Agricultural Research Center, (1989) No. 21, pp. 253-262.
CODEN: ANKHDV. ISSN: 0388-7995.
DT Article
FS BA
LA JAPANESE
ED Entered STN: 25 Oct 1990
Last Updated on STN: 25 Oct 1990
AB These studies were carried out to clarify the mechanism of synthesis and accumulation of organic acids in Satsuma mandarin, by measuring enzymatic activities relating to organic acid synthesis and the amount of 14CO2 fixation and 14C in the components of the fruit during the growing and storing stage. The results obtained are as follows: 1. Enzymatic activities in skin and flesh of fruits were measured in each stage. The activities of isocitrate dehydrogenase, phosphoenolpyruvate carboxylase, citrate synthetase were higher in the juice of flesh vesicle tissue than the juice of skin's, while the activity of aconitase was almost same in both tissues. 2. The activity of citrate synthetase was observed similar

degree in both fraction of soluble and mitochondria those separated by centrifuging method, while the activity of malate dehydrogenase was higher in the soluble fraction and the activity of NAD dependent isocitrate dehydrogenase was higher in the mitochondrial fraction. 3. The change of enzymatic activities were measured with the fruits during growing and storing stage. The activity of NADP dependent isocitrate dehydrogenase was scarcely observed at early stage (July) of fruit growth, however it increased in accordance with the fruit development, and these tendency maintained during the first one month of storage at 0°C. The activity of malate dehydrogenase kept higher level at early stage, subsequently decreased to the lowest level at October with the development of the fruits. Thereafter increased again and reached to the peak one month after in storage. The activity of citrate synthetase increased throughout the stages of development and the first one month of storage. 4. The enzymatic activities were measured with the fruits which were mechanically shocked or stored in various circumstances. The activity of phosphoenolpyruvate carboxylase in the fruits shocked or stored at high temperature (> 30°C) and high relative humidity (100%) was lower as compared with those in the non-shocked fruits or the fruits stored at 3°C with humidity of 85%. The activity of isocitrate dehydrogenase was higher both in skin and flesh of fruits stored in high humidity than those in low humidity, and was higher in the skin of fruits stored in high concentration of CO2 in atmosphere than the ones stored low CO2 condition. While it was lower in the flesh of shocked fruits than non-shocked ones. 5. Fruits mechanically shocked or stored in various circumstances were laid in the dark room filled with atmosphere including 14CO2 for 24 hours. After that the amount of 14C incorporated into soluble fraction fruits were measured. Total 14C activity in the flesh of fruits stored in high concentration of CO2 or stored after shocked was lower than those stored in low CO2 or non-shocked. 14C14 activities in components of fruit which were separated by ion-exchange resins were measured. The activities were lower in the fraction of amino acids of fruit stored in high concentration of CO2 and in the fraction of organic acids in the fruit shocked than others.

L8 ANSWER 6 OF 9 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 1985:451297 HCAPLUS
DN 103:51297
OREF 103:8219a,8222a
TI Effect of physiological state of lupine seeds and their treatment with gibberellin and 6-benzylaminopurine on the activity of ribulose diphosphate carboxylase
AU Rusinova, N. G.; Dubrovskii, N. G.; Likholat, T. V.; Doman, N. G.
CS Inst. Biokhim. im. Bakha, Moscow, USSR
SO Doklady Akademii Nauk SSSR (1985), 281(4), 1021-4 [Plant Physiol.]
CODEN: DANKAS; ISSN: 0002-3264
DT Journal
LA Russian
AB Soaking seed, aged for 2-4 days at 41° and 100% humidity, in 10 mg BAP/L or in 50 mg/L of gibberellins consisting mostly of gibberellin A3 partially restored germination and growth rate and the activity of ribulose diphosphate carboxylase in 10-day-old yellow lupine seedlings. The phytohormone treatments also restored the activity of endogenous gibberellins and cytokinins.

L8 ANSWER 7 OF 9 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 1987:631337 HCAPLUS
DN 107:231337
OREF 107:37071a,37074a
TI Treatment of lupine and triticale seeds with growth regulators and the

activity of ribulose bisphosphate carboxylase from leaves of seedlings
AU Rusinova, N. G.; Doman, N. G.; Kosogova, T. M.; Dubrovski, N. G.; Likholat, T. V.
CS A. N. Bach Inst. Biochem., Moscow, USSR
SO Acta Universitatis Agriculturae, Facultas Agronomica (Brno) (1985), 33(3), 163-5
CODEN: AUAAB7; ISSN: 0524-7403
DT Journal
LA English
AB The level of endogenous phytohormones dropped in triticale and yellow lupine (Lupinus luteus) seeds aged at 40° and 100% relative humidity, and the activity of ribulose bisphosphate carboxylase and the content of soluble proteins in the leaves of 11-day seedlings grown from the seeds decreased by 150-500 and 20-40%, resp. The neg. effects of seed aging can be removed by treatment of the seeds with gibberellins, 6-BAP, and hydrel.
OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L8 ANSWER 8 OF 9 BIOSIS COPYRIGHT (c) 2010 The Thomson Corporation on STN
DUPLICATE 2
AN 1980:199360 BIOSIS
DN PREV198069074356; BA69:74356
TI THE ACTIVITY AND MALATE INHIBITION STIMULATION OF PHOSPHOENOL PYRUVATE CARBOXYLASE IN CRASSULACEAN ACID METABOLISM PLANTS IN THEIR NATURAL ENVIRONMENT.
AU VON WILLERT D J [Reprint author]; BRINCKMANN E; SCHEITLER B; THOMAS D A; TREICHEL S
CS UNIV BAYREUTH, UNIVSITAETSTR 30, D-8580 BAYREUTH, W GER
SO Planta (Heidelberg), (1979) Vol. 147, No. 1, pp. 31-36.
CODEN: PLANAB. ISSN: 0032-0935.
DT Article
FS BA
LA ENGLISH
AB The effect of environmental conditions, temperature, relative humidity and light, together with the regulation of PEPC (phosphoenolpyruvate-carboxylase) activity by malate and pH on CAM (crassulacean acid metabolism), was studied in members of the Mesembryanthemaceae (Aridaria sp., Psilocaulon, Prenia sladeniana) in their natural environment, the southern Namib desert (South Africa). During a 24 h period the characteristics of PEPC change. Before sunrise the activity is higher when measured at pH 7 than 8. With bright sunlight the activity measured at pH 7 drops to 20% of its pre-sunrise value, the activity only recovers gradually after malate disappearance and stays constant throughout the night. When measured at pH 8, PEPC shows an opposite behavior, i.e., activity increases in bright sunlight and declines as the pH 7 activity increases. A day-night oscillation in the capacity of malate to stimulate or inhibit PEPC was found. During the day malate inhibits about 90% of the PEPC activity at both pH 7 and 8. After sunset there is a sudden decrease in this inhibition and, at pH 8, malate stimulates the activity by 50%. At pH 7 the stimulation was less. Both stomatal conductance and malate formation increased only when the relative humidity at night rose to 80%. Changes in the properties of the PEPC coincided with the exposure to bright sunlight and changes in leaf temperature. The importance of these metabolic and environmental controls on the regulation of CAM in the Mesembryanthemaceae is discussed.

L8 ANSWER 9 OF 9 NTIS COPYRIGHT 2010 NTIS on STN
AN 1983(18):05745 NTIS Order Number: DE83701753/XAB
TI Influence of the Nitrate Concentration and Source in the Incorporation of exp 14 CO sub 2 by the RuBP-Carboxylase from Wheat (Triticum

Aestivum) and Maize (Zea Mays).
AU Garcia Pineda, M. D.; Saez, R. M.; Gines Diaz, M. J.
CS Junta de Energia Nuclear, Madrid (Spain). (014974000 3485000)
NR DE83701753/XAB; JEN-525
75p; 1982
DT Report
CY Spain
LA Spanish
NTE In Spanish.
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OS GRA&I8326; I1400
AB The effect of the concentration and source of nitrogen in the culture media has been studied regarding its influence in the activity of the RuBP-carboxylase from wheat and maize during the first month of development. Wheat and maize has been chosen as plants representative of two different types of CO sub 2 assimilation: C3 and C4 respectively. Plants have been grown in hydroponic media and under temperature, humidity and nutrient salts control. A negative effect of NH sub 4+ has been observed in the enzymatic activity of wheat seedlings, this effect being more remarkable as NH sub 4+ concentration increases and as long the time of treatment. In our experimental conditions the most favorable source of nitrogen has been NO sub 3 NH sub 4 . The specific activity of the enzyme from wheat is about four times higher than in maize, even it decreases with time. This decreasing has not been observed in maize, with the exception of total absence of nitrogen in the media. We have not seen significant differences between the two photoperiods which have been tested. Also no differences have been found in the enzyme activities at the different NO sub 3 NH sub 4 concentrations assayed, and it seems that RuBP-carboxylase metabolism is only affected in the case of absolute stress. (Atomindex citation 14:731871)

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=> s l2 (3S) humidity
L9 1 L2 (3S) HUMIDITY

=> d l9 bib ab

L9 ANSWER 1 OF 1 BIOSIS COPYRIGHT (c) 2010 The Thomson Corporation on STN
AN 1986:200170 BIOSIS
DN PREV198681091470; BA81:91470
TI OXYGEN CONSUMPTION OF AQUEOUS SUSPENSIONS OF WHEAT WHOLEMEAL BRAN AND GERM INVOLVEMENT OF LIPASE AND LIPOXYGENASE.
AU GALLIARD T [Reprint author]
CS RHM RESEARCH LTD, LORD RANK RESEARCH CENTRE, LINCOLN ROAD, HIGH WYCOMBE, BUCKS, HP12 3QR, UK
SO Journal of Cereal Science, (1986) Vol. 4, No. 1, pp. 33-50.
CODEN: JCSCDA. ISSN: 0733-5210.
DT Article
FS BA
LA ENGLISH
ED Entered STN: 28 May 1986
Last Updated on STN: 28 May 1986
AB The oxygen consumption values (μmol O2/10 min per g at 25° C)

of aqueous suspensions of wheat wholemeal (0.1-3.0), bran (1-18) and germ (1-11) are substantially higher than those of white flours (0.01-0.03). The actual values depend upon storage history; the O2 consumption value of materials stored 2-4 weeks at 20° C, 65% r.h. are many-fold higher than those of the same materials from freshly-milled grain. The O2 consumption of mixtures of finely-ground (< 0.5 mm) bran and germ increases on storage more rapidly than that of bran or germ stored separately. The O2 uptake is due primarily to oxidation of unesterified, polyunsaturated fatty acids, catalysed by lipoxygenase that is concentrated in the germ fraction. The increased O2 demand of stored materials is due to higher levels of polyunsaturated fatty acids, released during storage, by hydrolysis of triacyglycerols, catalysed by a triacylglycerol hydrolase (lipase) that is concentrated in the bran fraction. The triacylglycerol-hydrolase activity of wheat germ is relatively low. Thus, O2-uptake by aqueous suspensions of wholemeal flour can be explained in terms of the combined effects of the bran component, causing lipolysis during storage of wholemeal, and the germ component, catalysing the O2-dependent peroxidation of polyunsaturated fatty acids when the wholemeal is added to water; both bran and germ components contribute triacylglycerols as the substrates for lipolysis.

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